APPLIED TROPHOLOGY, VOLUME 14

Applied Trophology, Vol. 14, No. 4 (Fourth Quarter 1971)

Endocrine Glands and Aging; Relations of the Endocrine Organs

Contents in this issue:

- "The Endocrine Glands and Aging,"
- "The Relations of the Endocrine Organs (Schematically Arranged)."

The following is a transcription of the Fourth Quarter 1971 issue of Dr. Royal Lee's *Applied Trophology* newsletter, originally published by Standard Process Laboratories.

The Endocrine Glands and Aging

Poppa Yoder, in his final summation in the musical comedy *Plain and Fancy*, said, "So soon ve get oldt undt so late schmart." However, the effects of time alone do not govern age. Apparently, the important factor is that our endocrine glandular system is arranged to operate a given length of time and possibly runs down, like a wound-up clock. To illustrate, a pigeon dies of senile degeneration after about ten years of life while a parrot physically similar and supplied with about the same type of food lives for fifty or more years.

Hereditary Transmission

From the above we must conclude that the life period is a hereditary characteristic, determined by the modification of inheritance in successive generations, and is generally beyond the range of ordinary influences. In fact, it has been stated that "a hereditary characteristic of definite survival value will not make itself evident in a race subject to natural selection, in less than thirty generations."

However, we believe this statement much too expansive during this time of pollution of our air, food, water, and other modern hazards. We also know that the lives of specific individuals and others in certain occupations do have their lives shortened.

Statistics, Stress, and Drugs

Early life insurance statistics proved that deep sea fishermen live the longest, with watchmakers ranking a close second. These two occupations seem so incongruous that the only similarity we can determine is that in each the worker has little occupational cause for worry. This, we believe, supports the old axiom, "Worry kills more people than work."

Worry may be expressed by anxiety, fear, torment, and frustration. It becomes a stress that wears down the adrenal glands and interferes with their normal endocrine action. The present popular method of treating stress is to stimulate the glands with drugs. Stimulation at this point may be compared to whipping a tired horse. The body subjected to stimulants and antidepressants begins to wear out and become "aged" accordingly. With our better knowledge of nutrition and endocrinology it is possible to replenish the nutrition of these overworked glands instead of prodding them into activity with stimulants.

The Liver, an Endocrine Gland?

The term "endocrine glands" has taken the place of the older designation of "ductless glands," for several of these glands with a duct are just as much glands of "internal secretion" as those without ducts. In fact, several of them have multiple functions, as for instance the pancreas and liver, both of which are a vital part of the digestive system.

Shares

HISTORICAL ARCHIVE SEARCH

Search For...

GO!!

YOUR CART

FEATURED ARCHIVE SUBJECTS

Lee Foundation for Nutritional Research
acid-alkaline balance
digestive health
heart disease
low-carb diet
prenatal nutrition
processed foods and disease
raw foods
soil health and nutrition

RECENT POSTS

Good to Know: Understanding Standard Process Combination Products
22 hours ago

Happy Thanksgiving from SRP!
1 week ago

The term "internal secretions" originated in 1855 when Claude Bernard used it in describing the glycogenic function of the liver. It was Bernard, a famous French physiologist, who first suggested the liver might also produce an internal secretion. In fact, it was his experimental demonstration of the glycogenic function of the liver that later become the principal foundation or keystone for our present understanding of metabolism and endocrinology.

Other Endocrine Glands

The presently accepted endocrine organs are the adrenals, gonads, liver, pancreas, parathyroids, pituitary, pineal, thymus, and thyroid. With the possible exception of the pineal body, all are believed to be dual service organs. Several early scientists, including Charles E. de M. Sajous, who became the "Father of Endocrinology" in America, believed that secretions are also produced by the duodenum, heart, mammae, placenta, prostate, and spleen. These secretions, presently known as hormones, are necessary for the normal functioning of the body by generally activating the nervous system, stimulating the circulation and, most of all, by harmonizing the entire glandular system.

Twenty-five years after Sajous published his book on endocrine immunity, *Internal Secretions and Principles of Medicine*, we find that Y. Tokumitsu of Imperial University, Japan, reached a similar conclusion: "We have learned the mutual relationship between the endocrine organs using as an indicator the immune bodies and have proved that the uterus, spleen, thymus and liver, which have always been under discussion as to their hormone functions, so evidently secrete hormones."

Hormones and Toxins

According to Schaffer, hormones are autocoids or chemical messengers released into the blood by the cells of one organ to stimulate or inhibit activity of a remote organ. As hereby demonstrated we have a pluriglandular effect. The metabolism of growth is not under the jurisdiction of any single secretion. The body economy is in general very democratic in all of its various processes and seldom yields to the domination of one gland. However, we must acknowledge that liver function is of the utmost importance in the metabolism of endocrine secretions to provide a necessary balance for the maintenance of health and vigor.

Liver cells contain enzyme systems capable of catalyzing many chemical reactions, so it is not surprising to find that hormones undergo metabolic changes in the liver. The liver contains enzymes that inactivate insulin, thyroxin, and certain anterior and posterior pituitary hormones and is in some way involved in the metabolism of the adrenocortical hormones. Clinically the most pertinent of liver action is in regard to the metabolism of gonad secretions, namely estrogens and androgens. Changes have been noted in the impaired biliary excretion of estrogens in the presence of hepatocellular damage or hepatic duct obstruction.

If we keep in mind the essentially chemical nature of endocrine activities, it is understandable that one of the principal functions of the hormones is to aid the liver in the neutralization of toxins. When, however, the liver function is slowed up through hepatocellular damage, or otherwise the endocrine system is also thrown out of time, endogenous toxins are readily formed, their neutralization is less prompt so that a certain amount of toxin is not neutralized and may enter the bloodstream.

Synthetic hormones or drugs also have to be detoxified by the liver and kidneys by organic reactions within the body. If detoxification is faulty, side reactions are possible. Then, too, synthetic estrogens have an inhibiting action on some enzymes, particularly histaminase, while natural estrogens activate the enzyme histaminase which destroys histamine. Natural endocrine secretions provide the sterols (precursors of vitamin D, E, and K) that take part in the building of hormones for the adrenal and sex glands. Apparently, synthetic cortisone and the synthetic female and male hormones lack these precursors.

Clinicians advise that, in any tests involving hepatic function and assimilation of internal secretions, renal function must also be investigated before evaluating abnormal findings of hepatocellular function. Due to any of these abnormalities the high concentration of free estrogen in the blood is generally responsible for some of the clinical manifestations frequently found in cirrhosis and other liver conditions.

In women these include menstrual disturbances (either amenorrhea or menorrhagia), uterine hemorrhage, infertility, breast changes, and vascular spiders (telangiectasis). In men they include decreased libido, impotence, infertility, testicular atrophy, telangiectasis, axillary alopecia, and gynecomastia. When we consider in addition the toxins absorbed from polluted air, food, and water, liver detoxification seems very necessary to promote health and delay aging.

As Hippocrates stated way back in 460 BC, "Diseases are crises of purification, of toxic elimination." In this country it is generally accepted that 75 percent of the elderly people have a lazy or insufficiently functioning liver. We must

Dr. Dority on the 33 Royal Principles of Health: #29. Interference with Transmission of Innate Forces
2 weeks ago

Why Phyllis Quinn's Slow Cook Gourmet Is an SRP Fave
3 weeks ago

Dr. Dority on the 33 Royal Principles of Health: #28. The Conductors of Innate Forces
4 weeks ago

Easy Liver Paté for All (with GAPS Stages)!
1 month ago

CONTACT US

+1 (866) 407-9323
+1 (970) 461-4602
5740 Boeing Drive, Loveland, CO, 80538
P.O. Box 270091, Fort Collins, CO, 80527
info@seleneriverpress.com
Guest Blog Post Submission Form presume, of course, that in many instances a lack of exercise is contributory. These ill people are aging because the toxins are not being removed.

Instead, they should be like a furnace, which, when the clinkers are removed, the pipes cleaned and draft restored, the fire will burn lustily again, thus the healing forces of the body will again go to work.

Another source of possible hormone imbalance was recently brought to light when Wisconsin's Senator Proxmire and others protested to the FDA and Dept. of Agriculture the constantly increasing use of Diethylstilbestrol in animal foods. The purpose of the use in beef cattle is to stimulate growth and to produce weight in much less time. Physiologically this is an unnatural process in that it disrupts the natural pluriglandular balance. As Harrower stated, "It is very probable that each endocrine has its antagonist or synergist that must be present to maintain balance."

The unbalance in this instance is apparently due to this synthetic compound possessing strong estrogenic properties. The Senators hope for the discontinuance of the use of this hormone in cattle food. Its use in animal foods was rejected by Canadian authorities several years ago because of its carcinogenic propensities in animals.

Mineral Importance

Carque stated, "Manganese enables the glands to improve the quality of their secretions." Thus mineral and/or vitamin unbalance may cause an endocrinopathy. As previously stated, each gland stores a specific mineral. It is common knowledge that iodine is a normal constituent of the thyroid gland and essential to proper functioning. In 1932 Harrower stated, "There is evidently some connection between the thyroid intervention in the immunizing response and its iodine content. This is especially interesting, for it opens the way to the use of iodine as a prophylactic remedy."

Records reveal the principal periods of demand for iodine are during puberty, pregnancy, menopause, in times of stress, or when infection occurs. These records also stress the deficiency of iodine in various geographic areas.

We are now witnessing a geographic area of infection in Texas horses. This encephalitis condition is similar to the one that occurred in the Winnipeg, Manitoba, Canada area in the late thirties and in the St. Louis the Southern Illinois area previously. At that time R.D. Radeleff, DVM, employed intravenous sodium iodide in the treatment of equine encephalitis. In his group so treated the death rate was less than 10 percent, while the control group mortality was 40 to 50 percent. Dr. McLoughry, another veterinarian, paralleled these results using potassium iodide. According to Alan H. Edmondson, DVM, the physiology of the horse and the human are very close, and they react similarly to various medications.

The use of iodides to control known virus diseases affecting the central nervous system is not new and not yet entirely accepted by the medical profession. However, early and dramatic relief has often been reported in conditions such as palsy and herpes zoster. Herpes zoster, described by Head and Campbell as "acute posterior horn poliomyelitis" has at times been reported as epidemic. These epidemics have sometimes paralleled polio epidemic areas.

An article in *Science*, July 1946, by F. Holtman, MD, advises that he believed in a possible relationship between the level of thyroid secretion and susceptibility to human poliomyelitis and encephalitis, due to the fact that these diseases occur in warm weather when natural secretions of the thyroid are the lowest. The fact that these conditions occur in late spring and summer sets them apart from all other infectious diseases.

It is interesting to note that the geographic areas mapped out for equine encephalitis do in general correspond with the polio map, and inasmuch as iodine and the thyroid seem to be involved, it also compares favorably with the goiter areas. In this regard J.F. Edward, MD, stated in the *Manitoba Medical Review*, June/July 1954:

> "My personal opinion is that iodine restores to normal a function, probably thyroid in origin, which produces a chain reaction of defense, and the patient is made to develop his own gamma globulin or its counterpart…I am in my own mind convinced that iodine constitutes a prophylactic means against polio; that its use in the treatment of polio tends to restore muscle tone early and reduces convalescence to a minimum. Its use as a prophylactic could be extended to large areas by using the present system employed by Provincial Health in goiter areas."

In these areas children have been found deficient in calcium and iodine and adults suffering with stiffened (hardening) arteries from calcium deposits due to a deficiency of magnesium and iodine. In areas where the soil contains iodine, or near the sea where the inhabitants habitually eat seafood of all kinds, goiter and other disorders of the thyroid gland are practically unknown. This is especially so in Japan where seaweeds such as dulse (sea lettuce) and kelp are considered a gourmet dish.

PRODUCT SEARCH

Search for...

GO!

YOUR CART

Good to Know: Understanding Standard Process Combination Products

22 hours ago

Happy Thanksgiving from SRP!

1 week ago

Dr. Dority on the 33 Royal Principles of Health: #29. Interference with Transmission of Innate Forces

2 weeks ago

Dr. W.A.P. Black of the British Nutrition Society says: "It can be said that seaweeds contain all the elements that have so far been shown to play an important part in the physiological processes of man. In a balanced diet, therefore, they would appear to be an excellent mineral supplement." These, as well as other seafoods, supply vitamins and, in addition to iodine, the minerals, magnesium, potassium, calcium, iron, copper, sulphur, manganese, and silica.

Protein-Bound Iodine (PBI)

While inorganic iodine is found in the blood, evidence is increasing that the inorganic form of iodine, such as used in iodized salt, is not the most effective way of nutritionally administering iodine. According to Emory Thurston, PhD, "Resurveys, following the use of iodized salt and iodizing of city water supplies over a period of years, have not shown the decrease in goiter that had been hoped."

In 1964, *Science News Letter* reported a review of research on an anti-polio substance found in seafoods such as abalone, clams, conch, oysters, and squid. With the natural iodine content and the fact that these are all high protein foods, the researchers concluded that this anti-polio factor was protein-bound iodine.

Then, too, the fact that it is the protein-bound iodine that conveys the circulating thyroid hormone iodothyroglobulin could have been a decisive factor. It is the iodothyroglobulin which accelerates the metabolism of the cells of the body, increases oxygen consumption, and stimulates growth, maturation, and differentiation of tissue; increases nervous irritability, muscular tonus, circulation, and also has a diuretic action. Without thyroid hormone, body cells cannot function normally. Sajous ascertained that loss of use of the thyroid gland caused the patient to be particularly susceptible to autointoxication.

Naturally bound iodine has also been found to be an essential catalyst in establishing calcium metabolism. However, the thyroid is a calcium eliminator so the parathyroids and the thymus act as inhibitors when necessary to aid in calcium assimilation. Without the synergists of the thyroid, it is possible to have simultaneous symptoms of both hypo and hyperthyroidism.

Besides the parathyroids and thymus other synergists are pituitary, spleen, gonads and liver, or at least the bile acids. Apparently included are the calcium metabolizers. Obviously, the changes of advancing years and probable nerve degeneration could influence the action of some of these thyroid synergists. Thyroid hypo-activity usually brings on edema, grossness of features, obesity, and wrinkles. To the general public wrinkles are especially indicative of age.

Pituitary Hormones

Science finds these active in maintaining the integrity of the thyroid, parathyroids, adrenals, gonads, and pancreas. The pituitary apparently controls the endocrines in a double manner. First, in the normal manner through the continuous sympathetic nerve fibers between glands as described by Sajous, or with specific hormones that stimulate the development of the parenchyma of each endocrine gland. As the master gland it also has the function of sending "endocrinotrophic" principles through the bloodstream to the various endocrine glands to see that a stock of the necessary hormones are being made and are ready to be released by telegraphic orders supplied by nerve impulses.

A sensitive governing device such as the pituitary gland must be just as efficient in braking as it is in the power take-off, when designed for the control of a self-maintaining mechanism—a mechanism that once started may not stop when the power-applying influence ceases to act. The need for both a stimulating and an inhibiting factor is apparent when we accept the theory of separate nervous controls and hormone maintenance of the supply apparatus.

The Prostate Gland

We seldom hear of this gland as a source of aggravation except in older men. As a part of the genitourinary system, sex function and urination are directly linked with it. Toxins, pressure from delayed or restricted urination, constipation, and a general deficiency of minerals, especially zinc, affect the health of the prostate. Zinc can be supplied from natural sources such as seafood, whole grains (especially wheat germ), and green leafy vegetables. However, the efficiency of the utilization of food is severely depressed by zinc deficiency.

Miller et al., Canadian scientists, found zinc-deficient male rats showed poor development of the pituitary, depressed growth and development of the accessory sex organs, with some rats showing sever atrophy of the testicular germinal epithelium. Supplementation with zinc reversed the lesions with the exception of testicular atrophy. Apparently, the nutritional approach is of incalculable benefit before the deficiency has progressed too far. As J.D. Waters, MD, has stated, "Too often the doctor forgets to check for possible nutritional unbalances and proceeds to prescribe dangerous drugs for conditions that are in part or completely amenable to physiological

Why Phyllis Quinn's Slow Cook Gourmet Is an SRP Fave
3 weeks ago

Search Historical Archives...
SEARCH

FEATURED ARCHIVE SUBJECTS

Lee Foundation for Nutritional Research
acid-alkaline balance
digestive health
heart disease
low-carb diet
prenatal nutrition
processed foods and disease
raw foods
soil health and nutrition methods, methods which cooperate with natural principles, such as all too frequent use of toxic drugs where a simple nutritional condition exists."

The New Medical Look

In *Clinical Biochemistry*, Cantarow and Trumper state: "Modern practice demands the application of present knowledge regarding the aberrations of endocrine, renal and hepatic function, abnormalities of organic and inorganic metabolism, nutritional defects, edema, dehydration, etc., in all branches of medicine as well as in pre- and post-operative treatment."

Echoing this observation on nutritional defects is FDA Commissioner Edwards, MD, when he advised scientists at the January meeting of the American Association for the Advancement of Science that "this country is faced with pockets of malnutrition in our cities across the land." He suggested that scientists generally take a new look at nutrition.

Refined Foods at Fault

Endocrine failure in general is felt to be due to the use of refined foods. In his text *Studies in Deficiency Disease*, Sir Robert McCarrison listed the effects of vitamin deficiency as either atrophy or compensatory enlargement of the endocrine glands. Incomplete foods upset mineral regulation by the endocrine system through crippling of one or more glands by mineral deficiency and as a possible result encouraging disease and advancing senility.

In metabolism, minerals and acids are needed for correct utilization. Any deficiency of either of these or of vitamins may cause endocrine unbalance. As constituents of the body they must be constantly supplied for the insurance of good health. Mineral free water (distilled) leaches minerals out of the body instead of supplying them, so soon becomes a hazard.

We are constantly being reminded of the bad effects from using too much salt or too much sugar. Yet, the only reason they are biochemically wrong, and a nutritional hazard, is that they have been robbed of their naturally balancing factors. Whole sea salt contains many minerals but, as sodium chloride crystallizes first, the others can be washed out in the refining process and because of their hydroscopic nature are considered commercially undesirable. Raw sugar cane juice is also a balanced mineral food, but through refining ends up as a nutritionally deprived crystalline carbohydrate. Each has lost desirable food factors.

Dr. Morris Pollard, Notre Dame University scientist, proved the detrimental effects of such food when he tried to keep rats alive for long periods under germ-free conditions but failed, until he developed a new diet from "natural products." The purpose of his experiment was to demonstrate that aging is caused largely by environmental factors, such as food, bacteria, viruses, air pollution, pesticides, smoking, drinking, radiation, and excessive sunlight. This experiment also demonstrated that the animal or human body could not build up organic compounds and is wholly dependent upon the vegetable kingdom for organic foods.

Vitamins, Organic Compounds

It is well to recall that the metabolism of the human body, being an animal function, is a breaking down process of complex compounds that are built up by the natural plant metabolism. When we consider that the vitamins in food are the materials that activate the endocrines to secrete their active principles, it is apparent that two ways of glandular insufficiency may occur: 1) lack of sufficient vitamins in the diet; 2) degeneration or atrophy of the gland, sometimes being an irreparable result of the first situation.

For instance, tuberculosis is now known to result from vitamin insufficiency. It is also known to be a disease that has a particularly debilitating effect on the endocrines. So, we have a vicious circle, susceptibility to infectious disease caused by vitamin starvation, the overworking of the endocrines to fight the disease increases the need for vitamins, and the exhaustion of the endocrines, which further increases the susceptibility to infection.

Diabetes is another example of endocrine starvation. In the pancreas, the islands of Langerhans degenerate from overwork in an attempt to secrete insulin from the bloodstream that contains too little of the raw material, the essential vitamins and minerals. From this we must ascertain that vitamins are a class of organic compounds providing complex food constituents.

As previously stated all the endocrine glands must have food factors such as vitamins and minerals in order to secrete their particularly vital fluids. If deprived of these factors they will atrophy and cease to function. Functional cessation could result in: 1) lessened resistance to infection, including dental caries; 2) metabolic disturbances; and 3) disturbance of organic function, including mental activity.

From a publication by Dr. Berman, of Columbia University, we learn, "The internal secretions constitute and determine much of the inherited powers of the individual and their development. They control physical and mental growth and all of the metabolic processes of fundamental importance. A derangement of functions, causing an insufficiency, an excess, or an abnormality, upsets the entire equilibrium of the body, with transforming effects upon the mind and the organs. In short, they control human nature, and whatever controls them controls human nature."

Controlled by Nutrition

As Dr. Morris Pollard states in *Geriatrics*, "The character of nutrition throughout life is the principal environmental factor determining longevity. Maximum growth requires the simultaneous presence of all the nutrients. Nutrition and health are inseparable, yet is has not been adequately recognized that well fed individuals are less subject to almost every type of pathology than malnourished ones. Sound nutrition in the elderly person differs little from that in the younger adult. This is to say obesity, undernutrition, or an improper balance of other nutrients of the diet, all have a detrimental effect."

As the old proverb states, *Disease makes age, age does not make disease.*

On the following page we are reprinting Harrower's schematically arranged "The Relations of the Endocrine Organs" to demonstrate the importance of each of them in fundamental endocrine balance.

The Relations of the Endocrine Organs (Schematically Arranged)

[To view this image, see page 48 of Dr. Harrower's *Practical Endocrinology*, available at the Selene River Press Historical Archives.] Reprinted from *Practical Endocrinology* by Henry R. Harrower, MD.

This entry was posted in Applied Trophology, Volume 14. Bookmark the permalink.

‹ Applied Trophology, Vol. 14, No. 3 (Third Quarter 1971)

Applied Trophology, Vol. 15, No. 1 (First Quarter 1972) ›

Leave a Reply

You must be logged in to post a comment.

Connect with:

Secured by OneAll Social Login